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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/766,048	01/19/2001	Frank Carr	41601/PBH/B600	1888

7590 10/03/2002

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EXAMINER
HARVEY, DAVID E

ART UNIT	PAPER NUMBER
2614	

DATE MAILED: 10/03/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/766,048	Carr et al.
Examiner	**Art Unit**
David E. Harvey	2614

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on *Jul 18, 2002*

2a) ☐ This action is **FINAL.** 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) *10-32* is/are pending in the applica

4a) Of the above, claim(s) _____ is/are withdrawn from considera

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) *10-32* is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claims _____ are subject to restriction and/or election requirem

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some* c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

*See the attached detailed Office action for a list of the certified copies not received.

14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

a) ☐ The translation of the foreign language provisional application has been received.

15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s). *11*
4) ☐ Interview Summary (PTO-413) Paper No(s). _____
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other:

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless -
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. **Claims 10, 12, 15, 16, and 17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Rodal et al. [US 5,564,098].**

As is shown in figure 1, Rodal et al. disclosed receiver which comprises:

1) an IC chip (10) which inherently comprises an IC substrate on which the illustrated "encompassed" circuit components are inherently disposed;

2) a first differential mixer (12) that is disposed on the substrate;

3) a first differential filter that is configured so as to be external to the substrate (e.g. off-chip @ 16);

4) a second differential mixer (20, 56), disposed on said substrate, for providing image rejection. [**note: lines 29-38 of column 4**].

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103© and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

4. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rodal et al. [US 5,564,098] for reasons that were set forth for claim 10, and additionally:

Claim 11 indicates that the recited "differential filter" is implemented as a "SAW" filter. While not specified in Rodal et al., the selection of a "SAW" filter implementation (@ 16) would have been an obvious choice of design given the known advantages provided by such an implementation (e.g. such as the short wavelength of acoustic waves which allows the size of the filter to be reduced).

5. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rodal et al. [US 5,564,098] for reasons that were set forth for claim 10, and additionally:

Claim 14 indicates that the substrate is processed using CMOS technology. While not described in Rodal et al., the selection of a "CMOS" technology would have been an obvious choice of design given the known advantages provided by such an implementation (e.g. such as the low power consumption, ease of fabrication, etc,...).

6. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Rodal et al. [US 5,564,098], for reasons that were set forth for claim 10, in view of Barber et al. [US #6,101,371]:

Claim 13 indicates that the differential filter is disposed on the substrate too. While not described in Rodal et al., Barber et al. evidenced the following:

1) that a "single chip" radio was in fact a widely recognized ultimate goal of those skilled in the telecommunications art [note lines 19-21 of column 1]; and

2) that it was known to have disposed the off-chip filters of RF receiving circuitry on-chip in pursuit of this goal [lines 35-66 of column 15].

Given the showing of Barber et al., it would have been obvious to have implemented the off-chip filter in Rodal et al. on-chip.

7. Claims 10, 13-20, 22-28, and 30-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over the publication "A 3 CHIP GaAs DOUBLE CONVERSION TV TUNER WITH 70 dB IMAGE REJECTION" by Ducourant et al. in view of Barber et al. [US #6,101,371].

1) As shown in figure 1, Ducourant et al. disclosed a "monolithic TV tuner" that could be fully integrated on three IC chips, wherein the receiver comprised:

A) the three IC chips which inherently comprises an IC substrate on which the illustrated circuit components were inherently disposed;

B) an AGC circuit (@ LNA)

C) a first differential mixer which controlled tuning via upconversion;

D) a first on-chip differential filter (IF1);

E) a second differential mixer for providing image rejection via quadrature downconversion.

2) Barber et al. evidenced the following:

A) that a "single chip" radio was in fact a widely recognized ultimate goal of those skilled in the telecommunications art [note lines 19-21 of column 1]; and

B) that CMOS compatible technology was available which allowed "single chip" radio implementations [lines 35-66 of column 15].

3) In view of the motivation provided by Barber et al., the examiner maintains that it would have been obvious to have used the CMOS compatible technology disclosed in Barber et al. In order to have implemented three chip receiver circuitry disclosed by Ducourant et al. as a "single chip" radio.

8. Claims 11, 12, 21, and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over the publication "A 3 CHIP GaAs DOUBLE CONVERSION TV TUNER WITH 70 dB IMAGE REJECTION" by Ducourant et al. in view of Barber et al. [US #6,101,371] for the same reasons that were set froth for claim 10, 19, and 25 above. The following is noted:

1) With respect to claim 11:

Claim 11 indicates that the recited "differential filter" is implemented as a "SAW" filter. While not specified in Rodal et al., the selection of a "SAW" filter implementation (@ 16) would have been an obvious choice of design given the known advantages provided by such an implementation (e.g. such as the short wavelength of acoustic waves which allows the size of the filter to be reduced).

2) With respect to claims 12, 21, 29:

While the prior art shows that it was known and desirable to have implemented the filters of receivers as on-chip components, such on-chip implementations raise the complexity/cost of the IC chip. Thus, in order to reduce such complexity/cost, it would have been obvious to one of ordinary skill in the art to have moved such filters off-chip as was notoriously well known in the art (a classic tradeoff between cost and form).

9. Any inquiry concerning this communication should be directed to **David E. Harvey** whose telephone number is **(703) 305-4365.** The examiner can normally be reached Monday-Friday between the hours of 9:30 AM and 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. John W. Miller, can be reached at (703) 305-4795.

Any response to this action should be mailed to:

Commissioner of Patents and Trademarks
Washington, D.C. 20231

or faxed to:

(703) 872-9314

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA. Sixth Floor (Receptionist).

Any inquiry of general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose number is (703) 306-0377.

DEH 9/17/01

DAVID E. HARVEY
PRIMARY EXAMINER